

AI's green revolution: Navigating Canada's forests for carbon capture in the age of climate change

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The Canadian landscape is made up of an abundance of forestland, ranking as the [third-largest forest area in the world](#) closely following Brazil, with 40 percent of its land surface area covered by forest. According to the [Canadian Council of Forest Ministries](#), Canadians enjoy an astounding 17 times the world average of forest area per person.

Canada's forests are an integral part of life in the country and around the world. They provide clean air and water, habitat for wildlife, sustainable building materials, and opportunities for employment, tourism and recreation. Canada's forests also act as a carbon sink, absorbing and storing carbon dioxide from the atmosphere.

For these reasons, it's extremely vital that we protect our forests.

Unlocking the carbon potential

At a time when the world grapples with the challenges of climate change, we have an immense responsibility to guard and sustain invaluable natural resources like our forests to mitigate its impact. One way to do this is through the measurement and reporting of carbon sequestration.

"Forests play a crucial role in combating climate change as they absorb over 7 billion metric tons of carbon dioxide annually," said Levente Klein, IBM Research. "Through carbon credits, organizations and individuals are incentivized to reduce their greenhouse gas emissions by providing a financial value for the carbon that is saved or sequestered. Using today's leading AI technologies, we can create more innovative, effective and sustainable carbon credit programs that support conservation and reforestation efforts".

IBM is taking a significant step forward in this direction by providing solutions to the Canadian carbon credit developer, C6 Captured, and the Canadian company, The Bloomington Group, to remotely measure carbon sequestration in the Brazilian Amazon Biome rainforest and Paraguayan Chaco forests. This innovative project uses IBM's AI technologies to streamline the carbon sequestration monitoring process, providing a more accurate and efficient way to calculate above-ground biomass and convert it into commercially viable carbon units.

The C6 project will operate as a sophisticated calculator to monitor carbon sequestration. The project will also use **an open-source geospatial foundation model, built from IBM's collaboration with NASA** and the IBM Environmental Intelligence Suite to remotely monitor above-ground biomass through historical and current satellite imagery.

"Accurately measuring carbon capture is a complex and time-consuming task that requires careful consideration of various factors such as tree species, age, and other environmental considerations," said Stephen Shefsky, Co-Founding Director at C6 Captured. "IBM's cutting-edge technologies empower us to revolutionize carbon capture measurement and reporting, while enhancing efficiency and effectiveness to preserve biodiversity and deliver tangible benefits to local communities".

Also embedded into the C6 project, **IBM Transparent Supply** provides an increased level of supply chain visibility and efficiency that offers companies greater assurance about the authenticity of their investments.

"IBM's collaboration with C6 Captured and The Bloomington Group Ltd. showcases the transformative potential of AI in driving environmental sustainability," said Ashish Sharma, IBM Canada's Sustainability Leader. "By leveraging our advanced AI capabilities and data-driven innovation, we can empower organizations to unlock new insights and accelerate their business processes that pave the way for a more sustainable and resilient world".

Breathing new life into Canada's forests

As Canada continues to prioritize environmental sustainability, the C6 project serves as a model for future collaborations that can help combat the effects of climate change. By preserving and sustainably managing its forests, Canada is not only protecting its own environment but also contributing to the health of the planet.

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